

FIG. 1

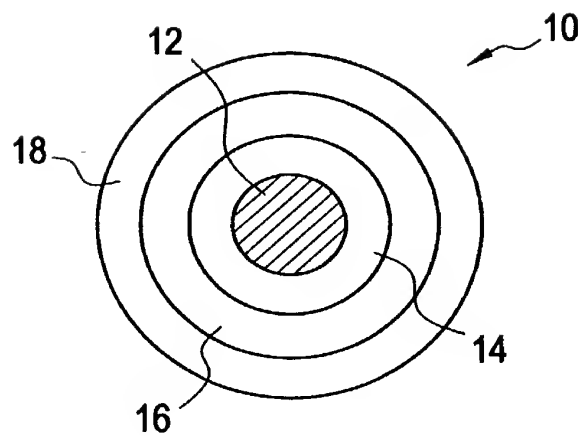


FIG. 2

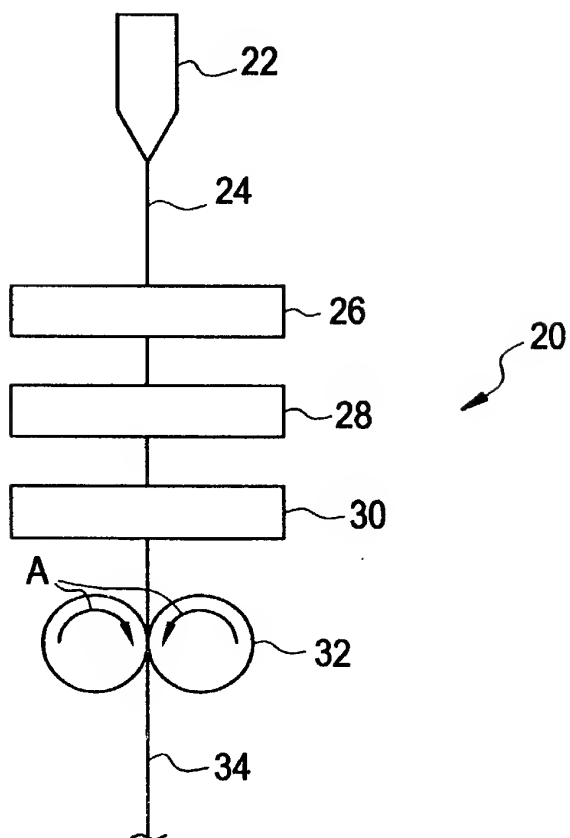


FIG. 3

Effect of Additive Concentration on Aged Fiber Strength with Methacrylate Silane

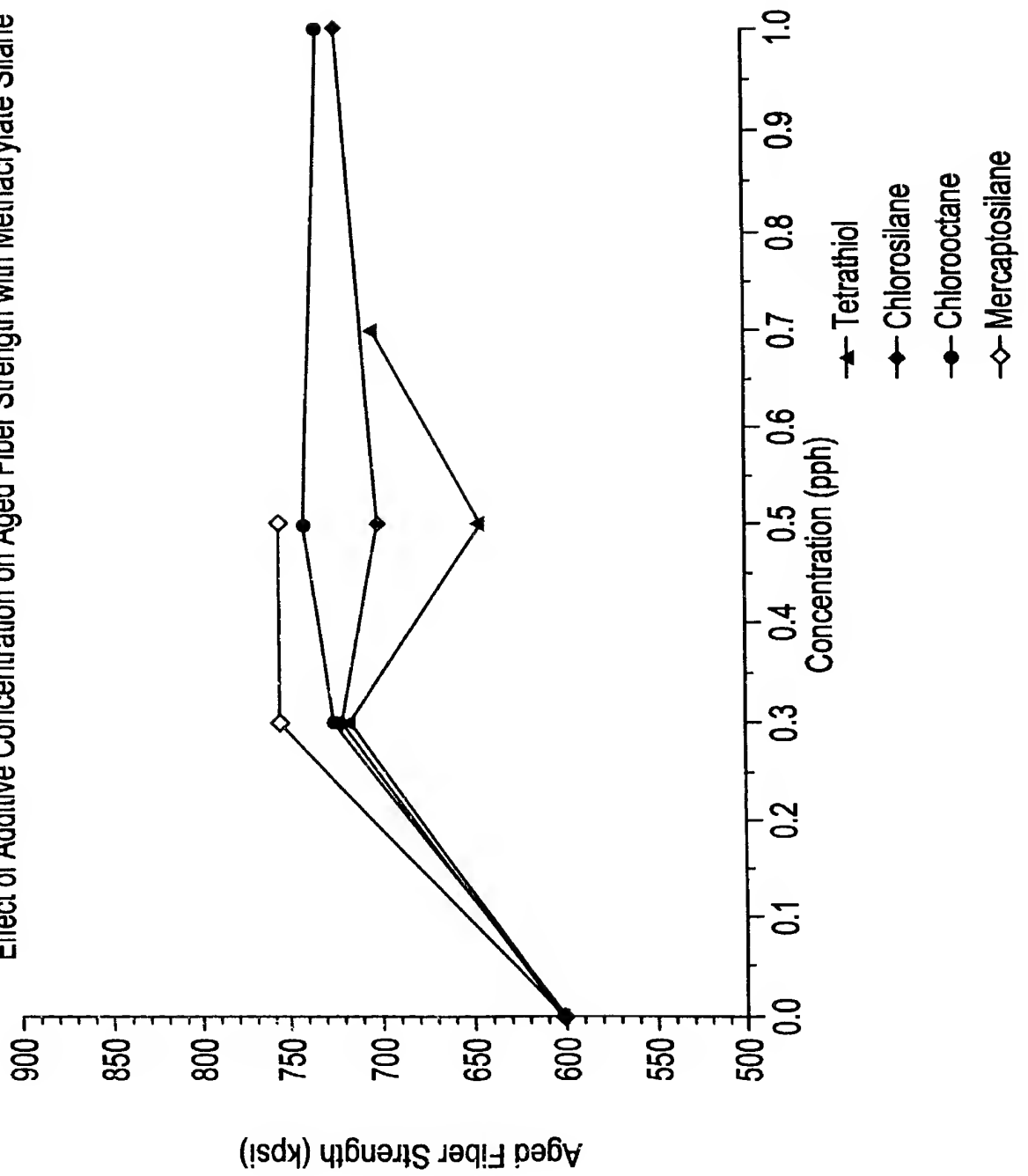
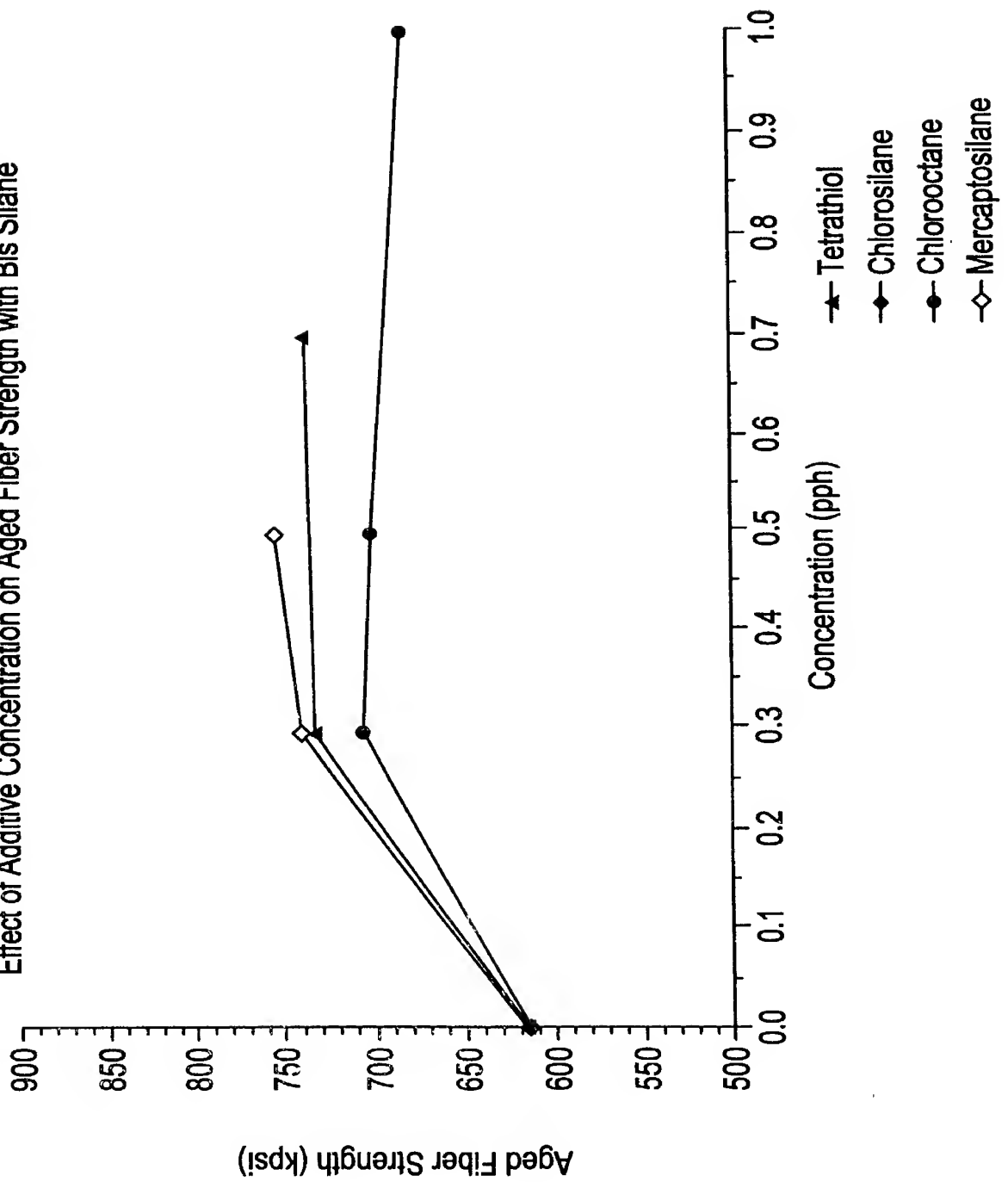
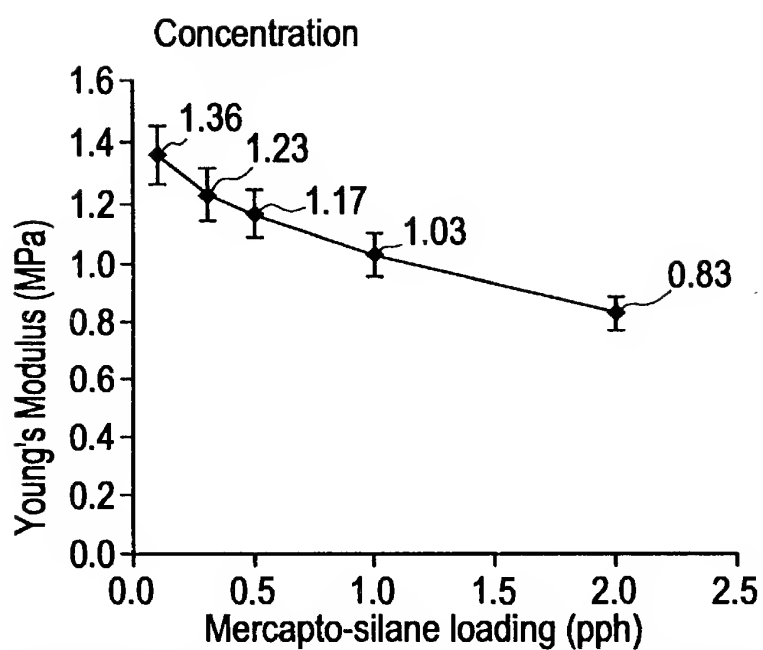


FIG. 4
Effect of Additive Concentration on Aged Fiber Strength with Bis Silane



5/13

FIG. 5



Error bars indicate a 7% coefficient of variance for the modulus measurements

6/13

FIG. 6

Plot of Young's Modulus as a Function of Cysteine Concentration

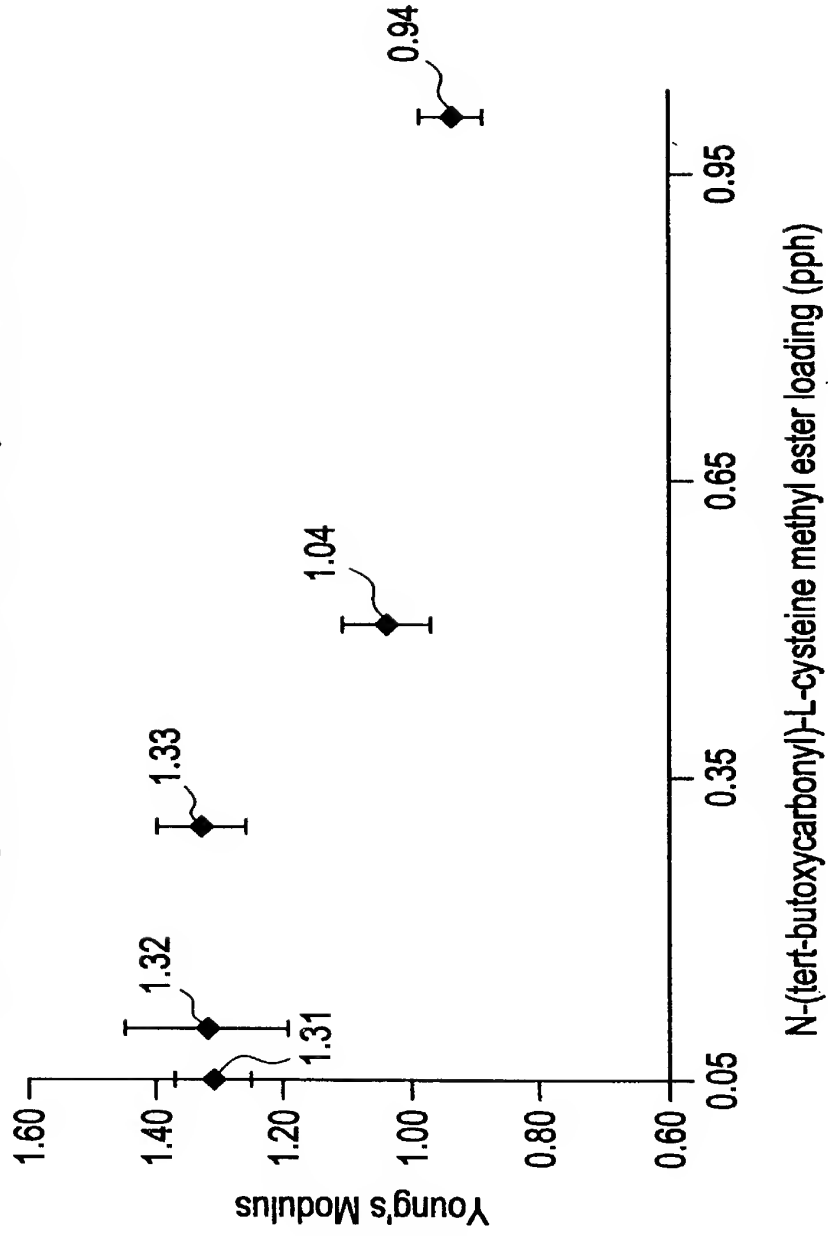
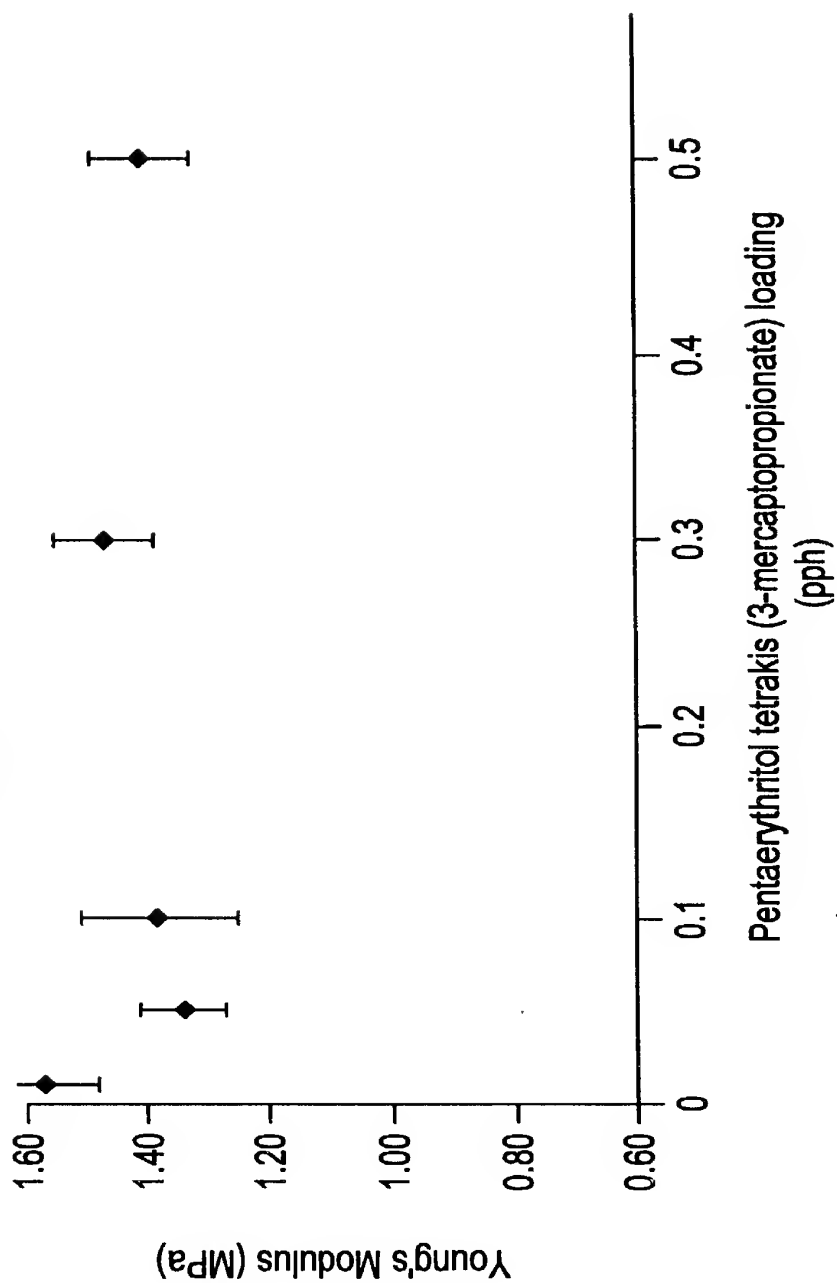


FIG. 7

Plot of Young's Modulus as a function of Tetra-thiol
Youngs modulus vs Tetra-thiol loading



8/13

FIG. 8

Relative Cure Speed as a Function of
Mercaptopropyltrimethoxysilane Concentration

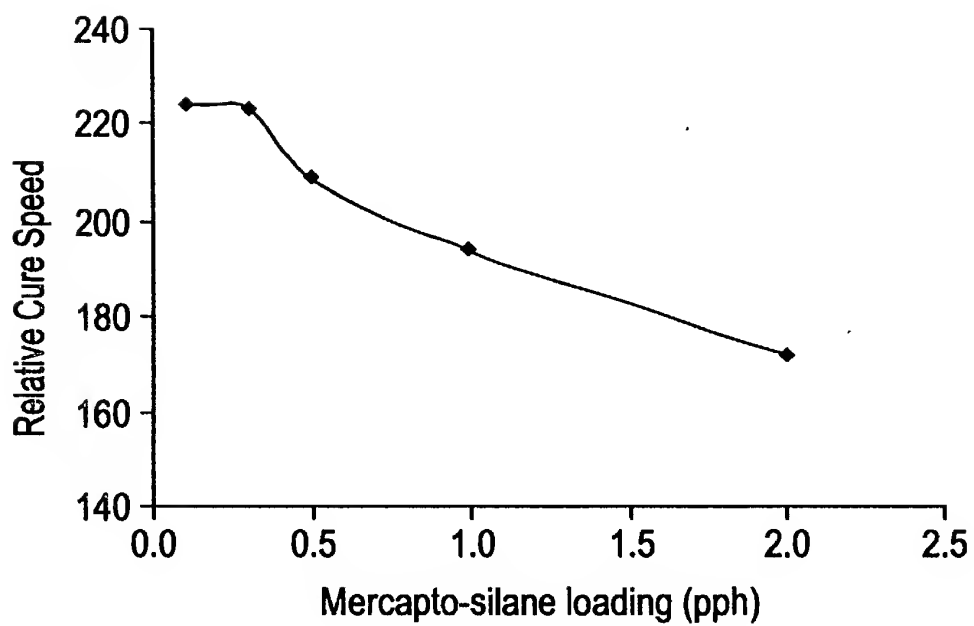
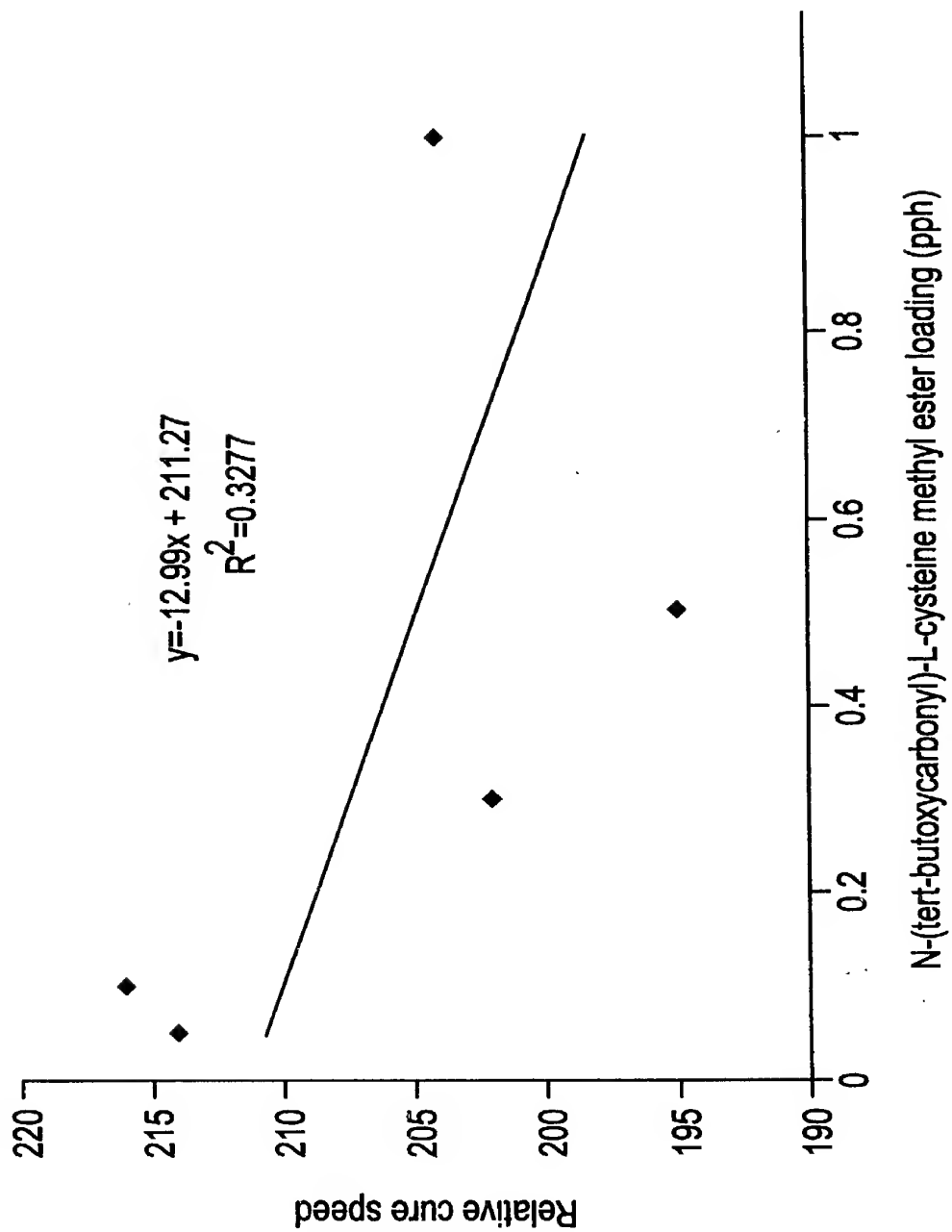


FIG. 9

Relative Cure Speed as a Function of Cysteine Concentration

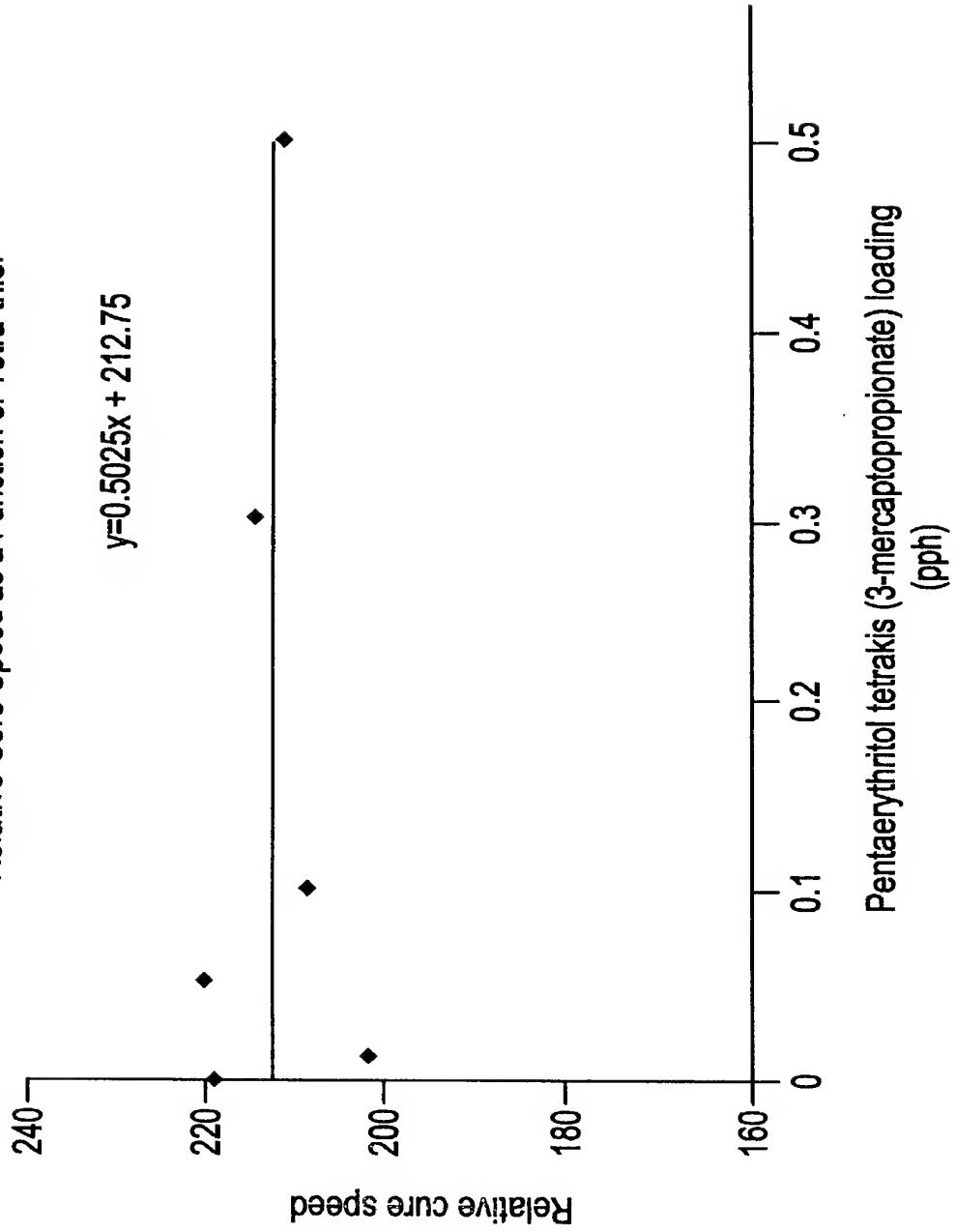


10/13

FIG. 10

Relative Core Speed as a Function of Tetra-thiol

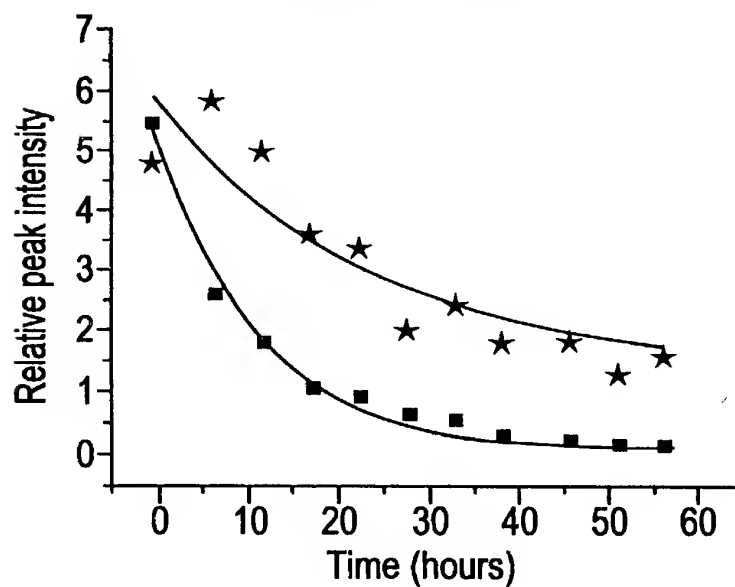
$$y=0.5025x + 212.75$$



11/13

FIG. 11

Plot of relative peak intensity of the four major Bis-silane isomers as a function of reaction time in THF, water and acid.

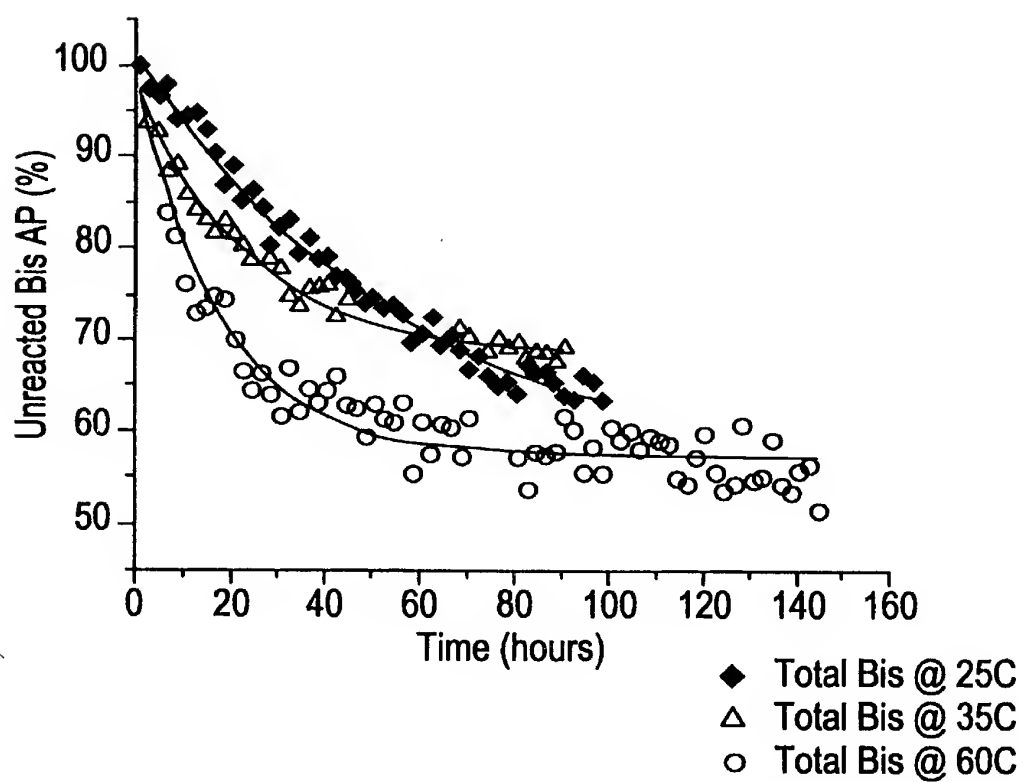


■ denote Bis-silane solution (control) and ★ denotes Bis-silane with Mercapto-silane solution (test), respectively. Solid curves represent first-order exponential decay fits to the experimental data.

12/13

FIG. 12

Total Bis-silane concentrations for coating 122 (control coating), as determined by ^{29}Si NMR measurements as 25, 35, and 60 °C.

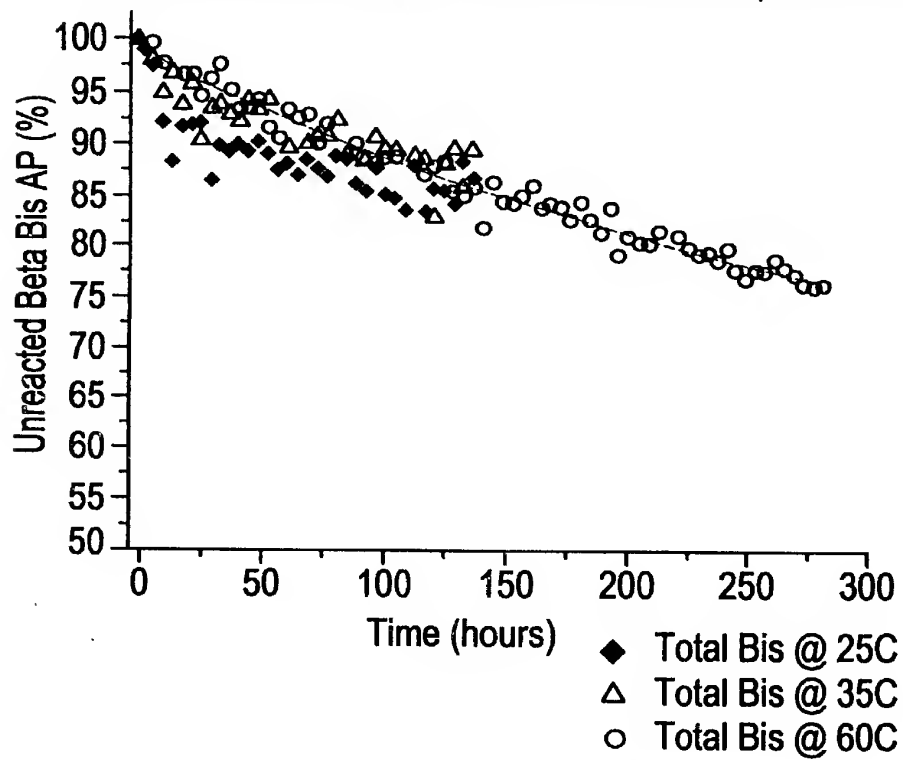


Solid curves represent exponential decay fits to the data.

13/13

FIG. 13

Total Bis-silane levels in coating 124 (test coating) as determined by in-situ ^{29}Si MAS NMR measurements at 25, 35 and 60 °C.



The curve represents the first-order decay behavior of the data 60 °C.